

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027281**Date Inspected:** 05-Mar-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Bernie Docena and Steve Jensen			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	SAS Tower		

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 5W-PP29.5-W2 TS transverse stiffener inside, QA randomly observed ABF/JV qualified welder Jason Collins perform manual welding root pass to cover on the Complete Joint Penetration (CJP) transverse stiffener splice butt joint. The welder was noted welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1010 Revision 1. The joint being welded has a double V-groove butt joint. The fit up was noted with less than 5mm root gap and the alignment was acceptable. During welding, ABF Quality Control (QC) Steve Jensen was noted monitoring the welding parameters of the welder with measured 128 amperes working current. During the shift, SMAW cover pass welding on one side of the splice butt joint was completed and the welder left early during the day due to medical appointment.

At Tower Base 9 meter external diaphragms, the following welding activities were observed;

1. Inner East external diaphragm drop in plate WD1-A59 weld joints #065-3 and #066-2, ABF welder Jin Pei Wang was observed continuing to perform fill passes to cover passes welding on the PJP T-joint between the 45mm diaphragm plate to shear plate and splice butt joint. The welder was noted welding at 1G (flat) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. During the

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shift, FCAW-G cover pass welding was completed on joints mentioned above and the welder has held the same preheat of more than 225°F for three hours after welding as required after welding.

2. After the completion of the above mentioned drop in plate, the welder has moved to another location South external diaphragm drop in plate ND1-A54 weld joints #081 (1 and 2) and #082 (1). ABF welder Jin Pei Wang was observed perform root pass welding on the PJP T-joint between the 45mm drop in plate and shear plate and splice butt joint to diaphragm plate. The welder was noted welding at 1G (flat position) utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. The plates were preheated and maintained to required 225° temperature using Miller Proheat 35 Induction Heating System. After the welding completion of the root pass, ABF QC Bernie Docena was observed performing MT on the root welded T-joints and butt joint. No relevant indications were observed. This QA also performed random MT on the same welded root pass with noted same result. The welder resumed FCAW-G welding fill pass to cover pass until the end of the shift where the welder has not completed the three (3) weld joints. The welder performed the post weld heat treatment (PWHT) after welding using the same preheat temperature and heating machine and held it for three hours as required.

3. Outer East external diaphragm drop in plate ED1-A429 weld joints #062 (1 and 2), ABF welder Wai Kitlai was observed continuing to perform fill passes to cover passes welding on the PJP butt joint between the 45mm diaphragm plate and drop in plate. The welder was noted welding at 1G (flat) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. During the shift, FCAW-G cover pass welding was completed on joints mentioned above and the welder has held the same preheat of more than 225°F for three hours after welding as required after welding.

4. Outer East external diaphragm drop in plate WD1-A57 weld joints #063-6 and #064-6, ABF welder Xiao Jian Wan was observed continuing to perform fill passes to cover passes welding on the PJP T-joint between the 45mm diaphragm plate to shear plate and splice butt joint. The welder was noted welding at 1G (flat) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. During the shift, FCAW-G cover pass welding was completed on joints mentioned above and the welder has held the same preheat of more than 225°F for three hours after welding as required after welding.

5. After the completion of the above mentioned drop in plate, the welder has moved to another location South external diaphragm drop in plate ND1-A51 weld joint #079 (1 and 2) and #080 (1). ABF welder Xiao Jian Wan was observed perform root pass welding on the PJP T-joint between the 45mm drop in plate and shear plate and splice butt joint to diaphragm plate. The welder was noted welding at 1G (flat position) utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. The plates were preheated and maintained to required 225° temperature using Miller Proheat 35 Induction Heating System. After the welding completion of the root pass, ABF QC Bernie Docena was observed performing MT on the root welded T-joints and butt joint. No relevant indications were observed. This QA also performed random MT on the same welded root pass with noted same result. The welder resumed FCAW-G welding fill pass to cover pass until the end of the shift where the welder has not completed the three (3) weld joints. The welder performed the post weld heat

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treatment (PWHT) after welding using the same preheat temperature and heating machine and held it for three hours as required.

At Tower Base 13 meter external diaphragm, this QA has observed ABF QC Fred Von Hoff perform Magnetic Particle Testing (MT) on the welded root pass of the Partial Joint Penetration (PJP) T-joint between the 45mm thick inner/outer East diaphragm plate and 60mm thick shear plate. ABF QC has MT'd the welded root pass on weld joints W101 and W103 with no relevant indication noted. This QA performed the same test and noted same result.

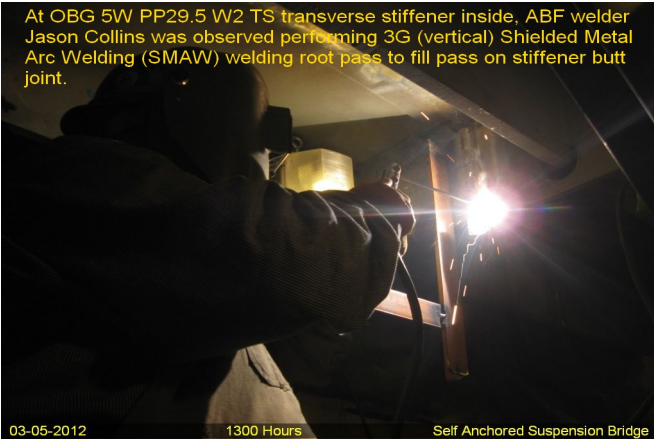
At Tower Base 13 meter diaphragm, ABF QC Fred Von Hoff was observed performing Magnetic Particle Testing (MT) on the welded root pass of the PJP T-joints W101 and W103.



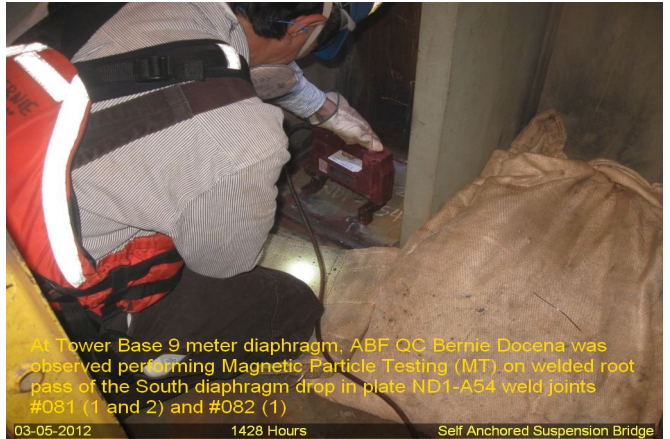
At Tower Base 9 meter, ABF welder Wai Kitlai was observed performing 1G (flat) position Flux Cored-Arc-Welding (FCAW-G) welding fill pass on the outer East diaphragm drop in plate ED1-A429 butt joints #062 1 & 2.



At OBG 5W PP29.5 W2 TS transverse stiffener inside, ABF welder Jason Collins was observed performing 3G (vertical) Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on stiffener butt joint.



At Tower Base 9 meter diaphragm, ABF QC Bernie Docena was observed performing Magnetic Particle Testing (MT) on welded root pass of the South diaphragm drop in plate ND1-A54 weld joints #081 (1 and 2) and #082 (1)



Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

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Reviewed By: Levell,Bill

QA Reviewer